

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

**FOREIGN PATENT**

**EP 0 333 463**

12

**EUROPEAN PATENT APPLICATION**

21 Application number: 89302565.0

81 Int. Cl.<sup>4</sup>: **F 16 B 12/00**  
**A 47 B 47/00**

22 Date of filing: 15.03.89

30 Priority: 15.03.88 AU 7260/88

32 Date of publication of application:  
20.09.89 Bulletin 89/38

34 Designated Contracting States: DE FR GB

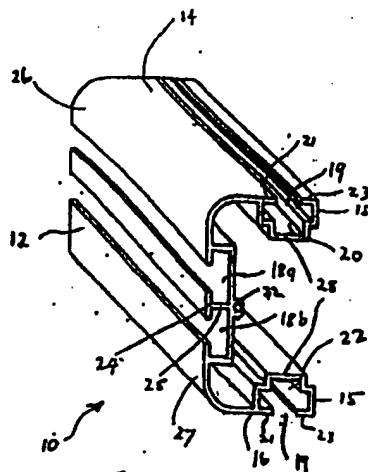
71 Applicant: ARTWRIGHT INDUSTRIES SDN BHD  
30, Jalan 1/114A Taman Indrahana Jalan Kucai Lama  
58100 Kuala Lumpur (MY)

72 Inventor: Yong, Yoke-keong  
30, Jalan 1/114A Taman Indrahana Jalan Kucai Lama  
58100 Kuala Lumpur (MY)

74 Representative: Votier, Sidney David et al  
CARPMAELS & RANSFORD 43, Bloomsbury Square  
London WC1A 2RA (GB)

54 Panel edge strips.

57 An elongated strip for a panel comprises an elongated front portion (12) and respective flange portions (14, 16) disposed at the sides of the elongate front portion whereby the edge strip is of generally U-shaped configuration, the front portion (12) and at least one of the flange portions (14, 16) each having an undercut groove (18, 20, 22) extending longitudinally of the edge strip and dimensioned to receive longitudinal inserts to engage and secure together registered grooves on adjacent edge strips.



**FIG 1**

## Description

## PANEL EDGE STRIPS

This invention relates to panel edge strips to facilitate the edge-to-edge joining of panels and/or the attachment of accessories to panels. The invention has particular but by no means exclusive application to panels, for example desk top panels, in modular furniture systems.

Traditionally, accessories have been attached to the surface ends of furniture by means of clamps, or by direct fastening to the surface, for example through use of nails, or screws or other devices. These forms of attachment are semi-permanent and do not afford the flexibility of being able to readily move accessories from one surface edge position to another. If nails or screws are used, the surface top is left unsightly when, at a later time, the position of an accessory is altered.

Known panels used in modular wall and partition systems have elongate edge pieces attached to planar end surfaces of each panel. These edge pieces have a single slot for interengaging consecutive panels. In other systems, the slot may integrally be formed in the panel end surface.

It is an object of the invention to provide an improved edge strip for a panel which is adaptable to facilitate the edge-to-edge joining of panels and/or the attachment of accessories, especially in modular furniture systems.

The invention accordingly provides, an edge strip for a panel, comprising an elongate front portion and respective flange portions disposed at the sides of the elongate front portion whereby the edge strip is of generally U-shaped configuration, wherein the said front portion and at least one of said flange portions each have an undercut groove extending longitudinally of the edge strip and dimensioned to snugly receive longitudinal inserts adapted to engage and secure together registered grooves on adjacent edge strips.

The front portion of the edge strip preferably has two undercut grooves. These grooves are advantageously of rectangular cross-section, and one or more of the grooves, for example the groove in the flange portion, may conveniently have a channel in its floor to seat fasteners for attaching the edge strip to a panel.

The invention also extends to a panel having at least one edge or edge face fitted with an edge strip as aforescribed.

The panel may include a further edge or edge face fitted with an elongate strip having respective longitudinal side edges, which strip has a plurality of spaced transversely extending slots or holes opening at one or other of said side edges for receiving complementary studs.

The invention will now be further described, by way of example, with reference to the accompanying drawings, in which:-

Figure 1 is an isometric view of a panel edge strip according to the first aspect of the invention;

Figure 2 is a cross-section of the edge

depicted strip shown in Figure 1, shown attached to a furniture panel;

Figure 3A, 3B and 3C are respective cross-sectional views depicting the use of edge strips, of the form shown in Figures 1 and 2, to join panels together at different relative angular positions;

Figure 4 is a diagrammatic isometric view showing how two partition panels may be butt-joined by means of edge strips according to the invention;

Figure 5 is a view similar to Figure 1 but further depicts the manner of attaching an accessory to the edge strip;

Figure 6 is an isometric view of an end-cap for the edge strip; and

Figure 7 is a perspective view of a panel fitted with edge strips according to the invention, and also with slotted strips for enhanced versatility.

The panel edge strip 10 illustrated in Figures 1 and 2 comprises an integral metal extrusion formed with an elongate front portion 12 and respective flange portions 14, 16 (hereinafter referred to as flanges) disposed at the sides of the front portion 12 whereby the edge strip is of generally U-shaped configuration. Front portion 12 and flanges 14, 16 each have an undercut groove 18, 20, 22 which extends longitudinally of the edge strip. The grooves are of substantially similar rectangular cross-section with openings 19 defined by opposed inwardly overhanging lips 21, 23. There are actually two grooves 18a, 18b side-by-side in front portion 12 separated by a T-section rib 24. The whole edge strip is symmetrical about a plane containing the web segment 25 of rib 24, and grooves 20, 22 extend to adjacent the free edge face 15 of flanges 14, 16.

Flanges 14, 16 are integrally connected to front portion 12 by respective curved corner webs 26, 27.

Each of the grooves 20, 22 in flanges 14, 16 has a rectangular section channel 28 in its floor to seat fasteners for attaching the edge strip to a panel. Channels 28 are slightly wider than but in register with the opening 19. A C-section rib 32 is provided internally behind rib 24 for a purpose to be described.

Flanges 14, 16 may be 5 to 80mm wide (most conveniently about 25mm), while openings 19 may be 1-60mm wide (most conveniently about 7mm). Lips 21, 23 may overhang by 1-15mm, say about 4mm. Front portion 12 may be 5 to 150mm wide, for example about 55mm wide.

Figure 2 depicts the manner in which the edge strip 10 may be secured to an edge face of a panel 50. The panel is rebated at both faces 34, 35 to accommodate flanges 14, 16 and position the external faces of the flanges 14a, 16a substantially flush with the panel faces. Fasteners, such as the screws illustrated, are driven through from channels 28 so that their heads are seated in the channels.

The manner in which edge strips of the forms shown in Figures 1 and 2 may be coupled together is

illustrated in Figures 3A-3C and 4. In essence, undercut grooves 18, 20, 22 are similarly dimensioned to snugly and firmly receive longitudinal inserts 40 of similar uniform cross-section adapted to engage and secure together respective registering grooves on adjacent edge strips. In the case of Figure 3A, two panels 50, 50' are fitted with strips edge 10, 10' and are butt joined to a pair of H-section inserts 40a, 40b passed along grooves 18a, 18b in the front portions 12, 12' of the panel edge strips 10, 10'. Figure 3B depicts a 90° join, while Figure 3C illustrates a mutual angular fixing using a V-shaped coupling insert 41. Inserts 40, 41 are typically extruded in a suitable plastics material e.g. Polyvinyl chloride (PVC).

Figure 4 shows two partition panels in position to be butt-joined, with the inserts 40a, 40b ready to be slid down the opposed grooves. The panels include cable ducts 51 at their lower ends.

The versatility of edge strip 10 is highlighted in Figure 5. An accessory base 60 is fastened to the strip by engagement of a screw 62 through the base 60 into a metal insert 62 slidably carried by groove 20. The position of the accessory can be varied along the groove by loosening the screw and moving the insert along the groove.

Edge strips 12 may be closed at their ends by end caps 70 of the configuration depicted in Figure 6. The end cap 70 engages the edge strip by way of a pair of projecting hollow spigots 72 which are a close matching fit in the cavities 74 under corner webs 26, 27 (Figure 1) between the adjacent side walls of grooves 20, 22. The external surfaces of the cap are designed to be flush with the corresponding surfaces of the edge strip. The end cap 70 may be secured into the end of the edge strip 12 by a fastener, for example a screw, which engages with C-section rib 32.

Figure 7 depicts an especially versatile panel 50" fitted at two edge faces 50a with edge strips 10" and at the other two edge faces 50b with slotted strips 80. Opening at the lower longitudinal side edge 81 of strip 80 are a plurality of, in this case four, equi-spaced transversely extending slots 82. These slots are dimensioned to receive respective studs of another furniture component and extend about half way across the strip. In this manner panel 50" may be supported by the furniture component bearing the studs. It will be noted that edge faces 50b are formed with sockets or notches 50c behind and in register with slots 82" to seat the heads of the studs.

Each slot 82 has a margin which is inclined with respect to the adjacent face of the strip so that the slot is correspondingly inclined. A suitable matching stud has an enlarged slotted head, a threaded shank, and an intermediate unthreaded portion which abuts the surface in which the stud is threaded and is complementary to the slots. This intermediate stud portion is of slightly less width than each slot and the inner end of each slot is curved to match the circumference of the intermediate stud portion.

## Claims

- 5 1. An elongate edge strip for a panel, comprising an elongate front portion and respective flange portions disposed at the sides of the elongate front portion whereby the edge strip is of generally U-shaped configuration, wherein the said front portion and at least one of said flange portions each have an undercut groove extending longitudinally of the edge strip and dimensioned to snugly receive longitudinal inserts to engage and secure together registered grooves on adjacent edge strips.
- 10 2. An edge strip according to claim 1 wherein said front portion has two of said undercut grooves.
- 15 3. An edge strip according to claim 1 or 2 wherein said undercut grooves are of rectangular cross-section.
- 20 4. An edge strip according to claim 1, 2 or 3 wherein one or more of said grooves has a channel in its floor to seat fasteners for attaching the edge strip to a panel.
- 25 5. An edge strip according to any preceding claim wherein said flange portions are integrally connected to said elongate front portion by respective curved webs.
- 30 6. An edge strip according to any preceding claim comprising a metal extrusion.
- 35 7. A panel having at least one edge or edge face fitted with an edge strip according to any preceding claim.
- 40 8. A panel according to claim 7 having another edge or edge face fitted with an elongate strip having respective longitudinal side edges, which strip has a plurality of spaced transversely extending slots or holes opening at one or other of said side edges for receiving complementary studs.
- 45 9. A panel according to claim 8 further comprising a margin about each slot which is inclined with respect to the adjacent face of the said elongate strip, whereby said slot is correspondingly inclined.
- 50 10. A panel according to claim 8 or 9 wherein said panel has behind said slotted elongate strip, shaped sockets behind and in register with said slots to seat said studs.
- 55 11. A panel according to any one of claims 7 to 10 fitted at at least one further edge or edge face with an elongate strip having respective longitudinal side edges, which elongate strip has a plurality of spaced transversely extending slots or holes opening at one or other of said side edges for receiving complementary studs.
- 60 12. A panel according to claim 11 further comprising a margin about each slot which is inclined with respect to the adjacent face of the said elongate strip, whereby said slot is correspondingly inclined.
- 65 13. A panel according to claim 11 and 12 wherein said panel has shaped sockets behind and in register with said slots to seat said studs.

14. An edge strip or panel substantially as hereinbefore described with reference to the accompanying drawings.

15. The steps or features disclosed herein or any combination thereof.

5

10

15

20

25

30

35

40

45

50

55

60

65



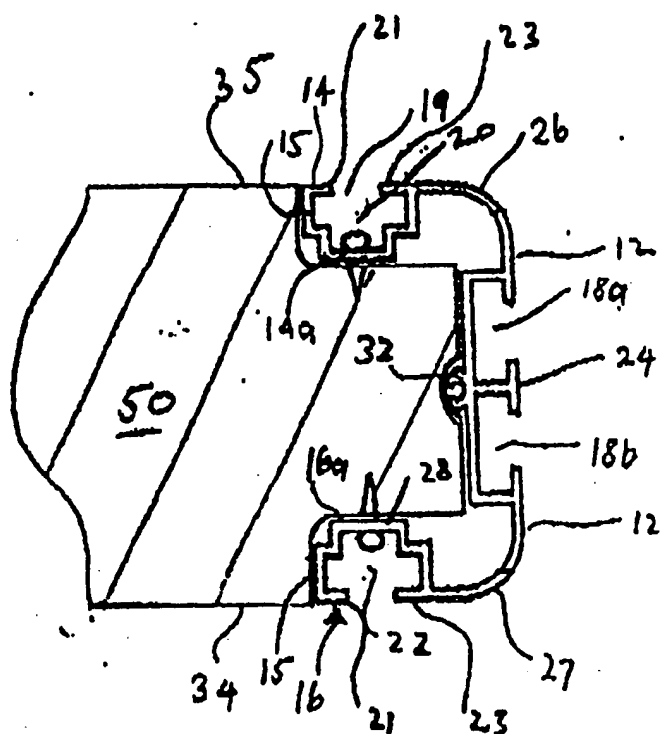


FIG 2



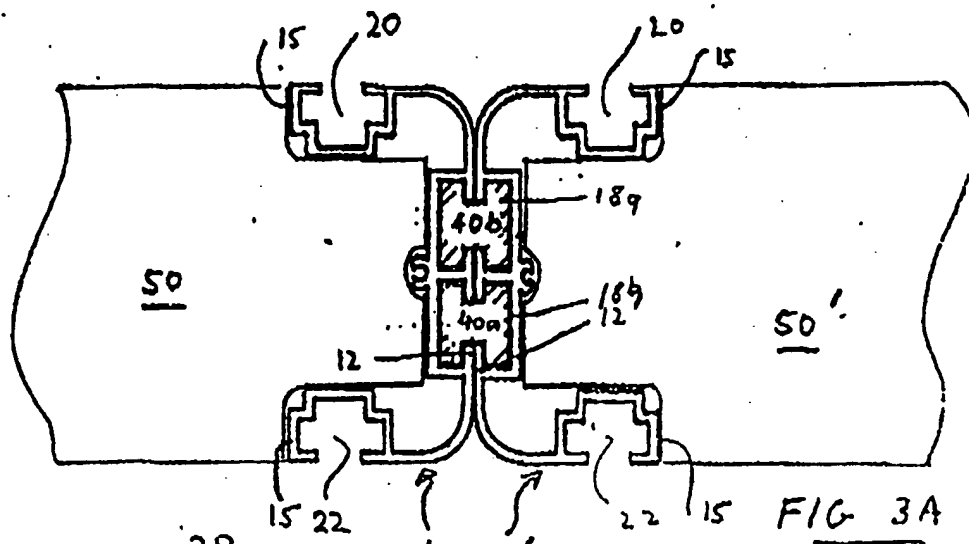


FIG 3A

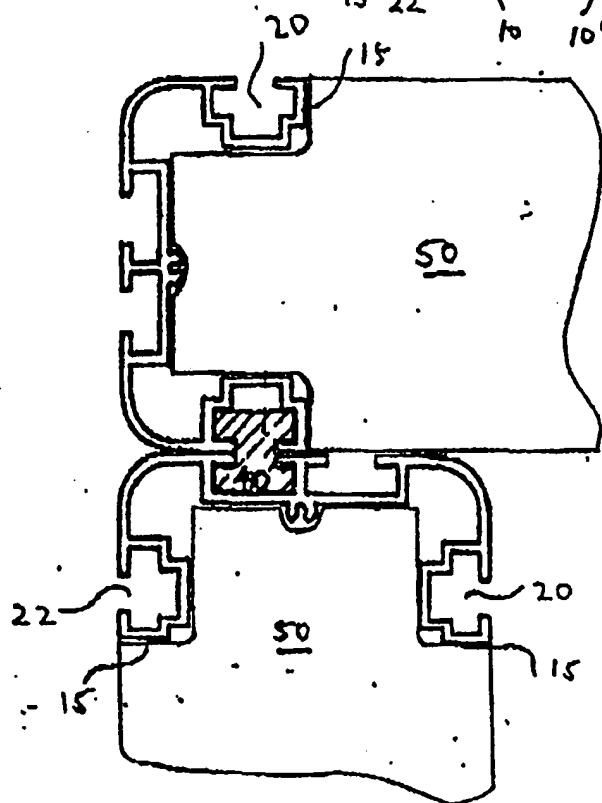


FIG 3B

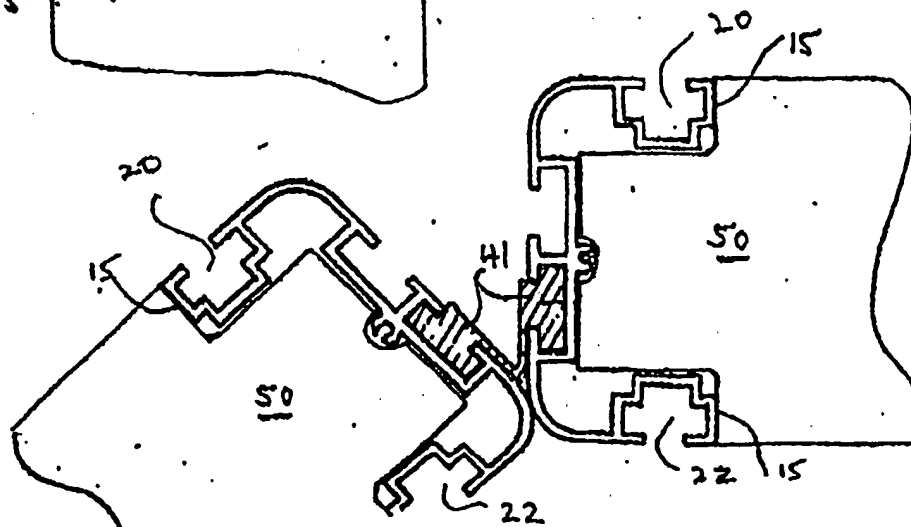


FIG. 3C

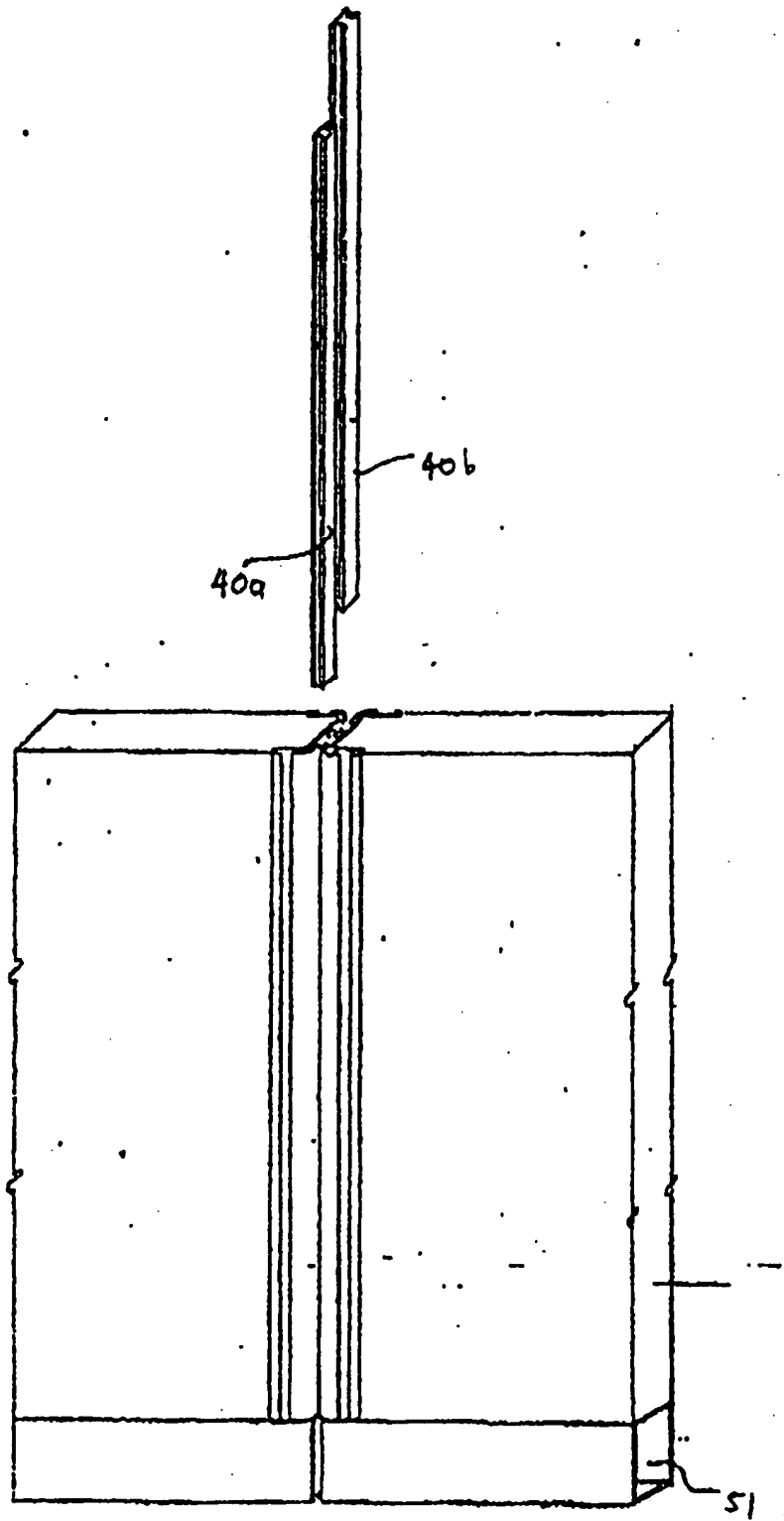


FIG 4

